REMARKS

Claims 1-24 are pending in this application. No claim has been amended. As result, entry of the foregoing responses is proper under 37 C.F.R. §1.116(b) because no new issues are raised, no further search is required, and the foregoing responses are believed to remove the basis of the outstanding rejections and to place all claims in condition for allowance.

Previously, claims 1-2, 9-10, and 17-18 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Schwab, U.S. Patent No. 4,543,627, as modified to incorporate selected features from Kinoshita et al., U.S. Patent No. 6,219,583. See Office Action (Paper No. 6). Now, the same set of claims 1-2, 9-10, and 17-18 have been rejected under 35 U.S.C. §102 as being anticipated by Schwab, U.S. Patent No. 4,543,627. Again, it is not clear as to which statutory basis the Examiner is relying upon to support the rejection of claims 1-2, 9-10, and 17-18. Accordingly, clarification is respectfully requested. However, under either 35 U.S.C. §102 or 35 U.S.C. §103(a), this rejection is respectfully traversed for reasons discussed herein below.

First of all, the rule under 35 U.S.C. §102 is well settled that anticipation requires that each and every element of the claimed invention be disclosed in a single prior art reference. In re Paulsen, 30 F.3d 1475, 31 USPQ2d 1671 (Fed. Cir. 1994); In re Spada, 911 F.2d 705, 15 USPQ2d 1655 (Fed. Cir. 1990). Those elements must either be inherent or disclosed expressly and must be arranged as in the claim. Richardson v. Suzuki Motor Co., 868 F.2d 1226, 9 USPQ2d 1913 (Fed.

Cir. 1989); Constant v. Advanced Micro-Devices, Inc., 848 F.2d 1560, 7 USPQ2d 1057 (Fed. Cir. 1988); Verdegall Bros., Inc. v. Union Oil Co., 814 F.2d 628, 2 USPQ2d 1051 (Fed. Cir. 1987). The corollary of that rule is that absence from the reference of any claimed element negates anticipation. Kloster Speedsteel AB v. Crucible Inc., 793 F.2d 1565, 230 USPQ2d 81 (Fed. Cir. 1986).

The burden of establishing a basis for denying patentability of a claimed invention rests upon the Examiner. The limitations required by the claims cannot be ignored. See In re Wilson, 424 F.2d 1382, 165 USPQ 494 (CCPA 1970). All claim limitations, including those which are functional, must be considered. See In re Oelrich, 666 F.2d 578, 212 USPQ 323 (CCPA 1981). Hence, all words in a claim must be considered in deciding the patentability of that claim against the prior art. Each word in a claim must be given its proper meaning, as construed by a person skilled in the art. Where required to determine the scope of a recited term, the disclosure may be used. See In re Barr, 444 F.2d 588, 170 USPQ 330 (CCPA 1971).

In the present situation, independent claims 1, 9 and 17, as previously discussed, define a system, method and Beauregard tangible medium containing instructions for reading data from a remote memory of a remote device to a local memory of a local device (i.e., network device) across a network. For example, method claim 1 and network device claim 9 define a method of reading data from a remote memory of a remote device to a local memory of a local device across a network, comprising:

sending a message from the local device to the remote device, via the network, said message including a transport header indicating a message type;

determining, at the remote device, if the transport header of said message identifies the message as a remote Direct Memory Access (rDMA) read operation; and

if the transport header of said message identifies the message as said remote Direct Memory Access (rDMA) read operation, then performing a remote Direct Memory Access (rDMA) write operation at the local device in accordance with data elements included in said message.

Similarly, Beauregard claim 17 defines a tangible medium storing a plurality of program instructions, which, when executed by a processor installed in a network device, causes the network device to perform the following:

receiving a message from a remote device, via a network, said message including a transport header indicating a message type;

processing said message to determine if the transport header of said message identifies the message as a remote Direct Memory Access (rDMA) read operation; and

if the transport header of said message identifies that the message is said remote Direct Memory Access (rDMA) read operation, then performing a remote Direct Memory Access (rDMA) write operation in accordance with data elements included in said message.

As expressly defined in each of Applicants' independent claims 1, 9 and 17, data is exchanged between a local device and a remote device, via a network, and the data message contains a transport header used to indicate a message type, i.e., a remote Direct Memory Access (rDMA) read operation so that a remote Direct Memory Access (rDMA) write operation can be performed.

In contrast to Applicants' independent claims 1, 9 and 17, Schwab, U.S.

Patent No. 4,545,627, as a primary reference, discloses a single system that contains multiple processors, also known as a multi-processor system, as shown in FIG. 1. Specifically, FIG. 1 illustrates an arrangement to allow one main processor 300 to communicate with eight (8) auxiliary processors 500-507, via respective standard direct memory access units 400-407. Since there are multiple processors 300, 500, 507 in a multi-processor system, shown in FIG. 1, obviously, there are multiple processor interface units 100 and 107 used to ensure that these multiple processors operate seamlessly, including sending and receiving direct data messages between the multiple processors. Alternatively, FIG. 4 illustrates another arrangement to allow one main processor to communicate with six (6) auxiliary processors 901-906, via a single standard direct memory access unit 900.

However, there is **no** disclosure anywhere from Schwab '627 of Applicants' reading data from a remote memory of a remote device to a local memory of a local device, via a network, as expressly defined in each of Applicants' independent claims 1, 9 and 17. More importantly, there is **no** disclosure anywhere from Schwab '627 of Applicants' exchange of data message between a local device and a remote device, via a network, and that the data message contains a transport header used to indicate a message type, i.e., a remote Direct Memory Access (rDMA) read operation so that a remote Direct Memory Access (rDMA) write operation can be performed in the manner defined in each of Applicants' independent claims 1, 9 and 17.

Nevertheless, the Examiner cites column 2, lines 3-10, column 3, lines 21-22, column 4, lines 9-10, lines 21-23, column 6, lines 48-50, lines 59-62, column 7, lines

3-4, column 8, lines 2-3, and FIG. 2 of Schwab '627 for allegedly disclosing Applicants' claimed "sending a message from [a] local device to [a] remote device, via a network, said message including a transport header indicating the message type" as defined in Applicants' independent claims 1, 9 and 17.

This citation is misplaced, however. FIG. 2 shows the information flow and program control flow for communications between two processors in a multi-processor system. FIG. 2 does **not** show communications between two (local and remote) devices across a network as alleged by the Examiner. The cited column 2, lines 3-10, column 3, lines 21-22, column 4, lines 9-10, lines 21-23, column 6, lines 48-50, lines 59-62, column 7, lines 3-4, and column 8, lines 2-3 of Schwab '627 all refer to the details of communications between two processors in a multi-processor system, and **not** between two (local and remote) devices across a network as alleged by the Examiner.

Recognizing the distinction between processors in a context of a multi-processor system as described by Schwab '627 and communication devices in a context of a network as defined by Applicants' independent claims 1, 9 and 17, the Examiner, on page 10 of the Office Action (Paper No. 8) dated on June 5, 2003, argues that, since Schwab '627 makes reference to the use of a telephone network environment where customers are located in different places, at column 3, lines 50-67 and column 4, lines 1-20, Schwab '627 must disclose "reading data from a remote memory of a remote device to a local memory of a local device, via a network" as defined in Applicants' independent claims 1, 9 and 17.

However, this argument is incorrect. Specifically, in column 3, line 58

extending to column 4, line 20, Schwab '627 describes that,

> In one specific embodiment, a main processor 300 is used to control a telephone central office, not shown in the drawing. The processor comprises a memory 310, a central processing unit 320, and an input/output unit 330. A detailed description of peripheral equipment and the operation of a telephone central office may be found in the Bell System Technical Journal, Vol. XLIII, No. 5, September, 1964. A processor which may be used for this application is described in the Bell System Technical Journal, Vol. LVI, No. 2, February, 1977. The input/output unit 330 represents the switching network customarily used to interconnect telephone customers and the equipment required to receive information from customers and from other central offices. The latter information is used to control the switching network which allows customers to be interconnected.
>
> The auxiliary processors are used for various data processing or input/output control functions less directly associated with the control of telephone connections. Messages between processor 300 and one of the auxiliary processors 500-507 are placed in separate sets of send and receive buffers in memory 310 of processor 300. Each processor interface unit 100-107 thus communicates with a different pair of buffers in memory 310. In this description, only communications between processors 300 and 500 are described in detail. Communications between processor 300 and one of the processors 501-507 are handled in the same manner, except that they use different buffer pairs in memory 310, different processor interface units, and different direct memory access units.

In other words, only the main processor 300 within a multi-processor system shown in FIG. 1 and FIG. 4 of Schwab '627 is used to control a telephone central office, and contains an I/O unit 330 to connect to the switching network. Other auxiliary processors such as processors 500-507 shown in FIG. 1, and processors 901-906 shown in FIG. 4, are connected directly to the main processor 300, via the direct memory access (DMA), to handle supplemental data processing functions offered in a multi-processor system. These auxiliary processors are **not** connected to the switching network in anyway.

In addition, the Examiner also cites column 3, lines 25-27, lines 31-36, column 6, lines 38-68, column 7, lines 40-50, and column 8, lines 1-5 of Schwab '627 for allegedly disclosing Applicants' claimed "determining whether or not the transport header ... identifies the message as a type of remote Direct Memory Access read operation" as defined in Applicants' independent claims 1, 9 and 17. In addition, the Examiner also cites column 4, lines 46-63, column 6, lines 48-68, column 7, lines 15-25, and column 8, lines 1-5 of Schwab '627 for allegedly disclosing Applicants' claimed "performing a remote Direct Memory Access operation to said local device in accordance with data elements included in the message" as defined in Applicants' independent claims 1, 9 and 17.

Again, these citations are misplaced. All the cited portions of Schwab '627 simply refer to the details of communications between two processors in a multi-processor system, and **not** between two (local and remote) devices across a network, and certainly, **not** performing any RDMA as alleged by the Examiner.

Nevertheless, the Examiner, on page 10 of the Office Action (Paper No. 8) dated on June 5, 2003, argues that Schwab '627, at column 6, lines 47-67; column 7, lines 1-25 and column 8, lines 1-7, somehow discloses "exchange of data message between a local device and a remote device, via a network, and that the data message contains a transport header used to indicate a message type, i.e., a remote Direct Memory Access (rDMA) read operation so that a remote Direct Memory Access (rDMA) write operation can be performed" as defined in Applicants' independent claims 1, 9 and 17.

Again, this argument is likewise incorrect. The cited column 6, lines 47-67 of

Schwab '627 refers to a format of a message transmitted between processors such as main processor 300 and auxiliary processor 500 shown in FIG. 3, including, for example, a standard header 351 and an arbitrary length body 360. The header 351 has a number of fields, including a "to" and "from" field. However, no where in FIG. 3 or the cited portion of Schwab '627 is there any disclosure of Applicants' claimed "data message contains a transport header used to indicate a message type", i.e., a remote Direct Memory Access (rDMA) read operation so that a remote Direct Memory Access (rDMA) write operation can be performed in the manner defined in each of Applicants' independent claims 1, 9 and 17.

In view of these deficiencies and incorrect interpretation of the teachings of Schwab '627, Applicants submit that there is no anticipation under 35 U.S.C. §102 nor obviousness under 35 U.S.C. §103 based on Schwab '627, and respectfully request that the rejection of claims 1-2, 9-10, and 17-18 be withdrawn.

Claims 3-4, 11-12 and 19-20 have been rejected under 35 U.S.C. §103 as being unpatentable over Schwab, U.S. Patent No. 4,543,627, as modified to incorporate selected features from Osborne, U.S. Patent No. 6,078,733 for reasons stated on pages 3-5 of the final Office Action (Paper No. 8). Since the correctness of this rejection is predicated upon the correctness of the rejection of Applicants' claims 1-2, 9-10 and 17-18, Applicants respectfully request that the rejection of claims 3-4, 11-12 and 19-20 be withdrawn for the same reasons discussed against the rejection of Applicants' claims 1-2, 9-10 and 17-18.

Moreover, even assuming *arguendo*, that Osborne '733 discloses what the Examiner alleges as "source and destination buffers being registered with the Virtual

Interface network interface controller" as defined in Applicants' dependent claims 3-4, 11-12 and 19-20, Applicants submit that the Examiner's proposed combination still does **not** arrive at Applicants' claims 3-4, 11-12 and 19-20 in the context of Applicants' base claims 1, 9 and 17 because there is **no** disclosure of Applicants' reading data from a remote memory of a remote device to a local memory of a local device, via a network, and Applicants' exchange of data message between a local device and a remote device, via a network, and that the data message contains a transport header used to indicate a message type, i.e., a remote Direct Memory Access (rDMA) read operation so that a remote Direct Memory Access (rDMA) write operation can be performed in the manner defined in Applicants' claims 3-4, 11-12 and 19-20.

Claims 5-6, 13-14 and 21-22 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Schwab, U.S. Patent No. 4,543,627, as modified to incorporate selected features from Osborne, U.S. Patent No. 6,078,733 and Krishnan et al., U.S. Patent No. 4,922,416 for reasons stated on pages 5-6 of the final Office Action (Paper No. 8). Likewise, claims 7-8, 15-16 and 23-24 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Schwab, U.S. Patent No. 4,543,627, as modified to incorporate selected features from Osborne, U.S. Patent No. 6,078,733 and Krishnan et al., U.S. Patent No. 4,922,416, and Chow et al., U.S. Patent No. 6,052,387 for reasons stated on pages 6-8 of the final Office Action (Paper No. 8). Again, these rejections are traversed for the same reasons discussed against the rejection of Applicants' claims 1-2, 9-10, and 17-18 under 35 U.S.C. §102/103 as being anticipated/unpatentable over Schwab, U.S. Patent No.

4,543,627.

In addition, even assuming *arguendo*, that Osborne discloses what the Examiner alleges as "source and destination buffers being registered with the Virtual Interface network interface controller" as defined in Applicants' dependent claims 3-4, 11-12 and 19-20, that Krishnan '416 discloses "a data element of the rDMA read message specifying the last data segment and completion of the rDMA read request" as defined in Applicants' dependent claims 5-6, 13-14 and 21-22, and that Chow '387 discloses what the Examiner alleges as "write descriptors with the sequence inserted into the immediate data field on the last segment of each request" as defined in Applicants' dependent claims 7-8, 15-16 and 23-24, Applicants submit that the Examiner's proposed combination still does **not** arrive at Applicants' claims 3-8, 11-16 and 19-24 in the context of Applicants' base claims 1, 9 and 17. For these reasons, Applicants respectfully request that the rejection be withdrawn.

In view of the foregoing amendments, arguments and remarks, all claims are deemed to be allowable and this application is believed to be in condition to be passed to issue. Should any questions remain unresolved, the Examiner is requested to telephone Applicants' attorney at the Washington DC area office at (703) 312-6600.

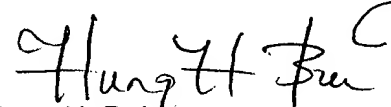
INTERVIEW:

Again, in the interest of expediting prosecution of the present application, Applicants respectfully request that an Examiner interview be scheduled and

conducted. In accordance with such interview request, Applicants respectfully request that the Examiner, after review of the present Amendment, contact the undersigned local Washington, D.C. area attorney at the local Washington, D.C. telephone number (703) 312-6600 for scheduling an Examiner interview, or alternatively, refrain from issuing a further action in the above-identified application as the undersigned attorneys will be telephoning the Examiner shortly after the filing date of this Amendment in order to schedule an Examiner interview. Applicants thank the Examiner in advance for such considerations. In the event that this Amendment, in and of itself, is sufficient to place the application in condition for allowance, no Examiner interview may be necessary.

To the extent necessary, Applicants petition for an extension of time under 37 CFR §1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 01-2135 (Case No. 219.37206X00) and please credit any excess fees to such deposit account.

Respectfully submitted,
ANTONELLI, TERRY, STOUT & KRAUS, LLP



Hung H. Bui
Registration No. 40,415

1300 North Seventeenth Street
Suite 1800
Arlington, VA 22209
Tel: 703/312-6600
Fax: 703/312-6666